



## SEQUENCE LISTING

Shaw, Gray D.  
Sako, Dianne S.  
Kumar, Ravindra  
Sullivan, Francis  
McDonagh, Tom

<120> Platlet Glycoprotein IB Alpha Fusion Polypeptides and  
Methods of Use Thereof

<130> 22058-503

<140> 10/068,426

<141> 2002-02-06

<150> 60/266,838

<151> 2001-02-06

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<170> PatentIn Ver. 2.1

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<213> Homo sapiens

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His Pro Ile Cys Glu Val Ser Lys Val Ala Ser His Leu Glu Val Asn  
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Cys Asp Lys Arg Asn Leu Thr Ala Leu Pro Pro Asp Leu Pro Lys Asp  
35 40 45

Thr Thr Ile Leu His Leu Ser Glu Asn Leu Leu Tyr Thr Phe Ser Leu  
50 55 60

Ala Thr Leu Met Pro Tyr Thr Arg Leu Thr Gln Leu Asn Leu Asp Arg  
65 70 75 80

Cys Glu Leu Thr Lys Leu Gln Val Asp Gly Thr Leu Pro Val Leu Gly  
85 90 95

Thr Leu Asp Leu Ser His Asn Gln Leu Gln Ser Leu Pro Leu Leu Gly  
100 105 110

Gln Thr Leu Pro Ala Leu Thr Val Leu Asp Val Ser Phe Asn Arg Leu  
115 120 125

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| Thr | Ser | Leu | Pro | Leu | Gly | Ala | Leu | Arg | Gly | Leu | Gly | Glu | Leu | Gln | Glu |  |  |
| 130 |     |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |  |  |
| Leu | Tyr | Leu | Lys | Gly | Asn | Glu | Leu | Lys | Thr | Leu | Pro | Pro | Gly | Leu | Leu |  |  |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |  |  |
| Thr | Pro | Thr | Pro | Lys | Leu | Glu | Lys | Leu | Ser | Leu | Ala | Asn | Asn | Asn | Leu |  |  |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |  |  |
| Thr | Glu | Leu | Pro | Ala | Gly | Leu | Leu | Asn | Gly | Leu | Glu | Asn | Leu | Asp | Thr |  |  |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |  |  |
| Leu | Leu | Leu | Gln | Glu | Asn | Ser | Leu | Tyr | Thr | Ile | Pro | Lys | Gly | Phe | Phe |  |  |
|     | 195 |     |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |  |  |
| Gly | Ser | His | Leu | Leu | Pro | Phe | Ala | Phe | Leu | His | Gly | Asn | Pro | Trp | Leu |  |  |
| 210 |     |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |  |  |
| Cys | Asn | Cys | Glu | Ile | Leu | Tyr | Phe | Arg | Arg | Trp | Leu | Gln | Asp | Asn | Ala |  |  |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |  |
| Glu | Asn | Val | Tyr | Val | Trp | Lys | Gln | Gly | Val | Asp | Val | Lys | Ala | Met | Thr |  |  |
|     |     |     | 245 |     |     |     |     |     | 250 |     |     |     |     | 255 |     |  |  |
| Ser | Asn | Val | Ala | Ser | Val | Gln | Cys | Asp | Asn | Ser | Asp | Lys | Phe | Pro | Val |  |  |
|     |     | 260 |     |     |     |     |     | 265 |     |     |     |     | 270 |     |     |  |  |
| Tyr | Lys | Tyr | Pro | Gly | Lys | Gly | Cys | Pro | Thr | Leu | Gly | Asp | Glu | Gly | Asp |  |  |
|     | 275 |     |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |  |  |
| Thr | Asp | Leu | Tyr | Asp | Tyr | Tyr | Pro | Glu | Glu | Asp | Thr | Glu | Gly | Asp | Lys |  |  |
| 290 |     |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |  |  |
| Val | Arg | Ala | Thr | Arg | Thr | Val | Val | Lys | Phe | Pro | Thr | Lys | Ala | Arg | Pro |  |  |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |  |  |
| His | Thr | Cys | Pro | Pro | Cys | Pro | Ala | Pro | Glu | Ala | Leu | Gly | Ala | Pro | Ser |  |  |
|     |     |     | 325 |     |     |     |     |     | 330 |     |     |     |     | 335 |     |  |  |
| Val | Phe | Leu | Phe | Pro | Pro | Lys | Pro | Lys | Asp | Thr | Leu | Met | Ile | Ser | Arg |  |  |
|     |     | 340 |     |     |     |     |     | 345 |     |     |     |     | 350 |     |     |  |  |
| Thr | Pro | Glu | Val | Thr | Cys | Val | Val | Val | Asp | Val | Ser | His | Glu | Asp | Pro |  |  |
|     | 355 |     |     |     |     | 360 |     |     |     |     |     | 365 |     |     |     |  |  |
| Glu | Val | Lys | Phe | Asn | Trp | Tyr | Val | Asp | Gly | Val | Glu | Val | His | Asn | Ala |  |  |
| 370 |     |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |  |  |
| Lys | Thr | Lys | Pro | Arg | Glu | Glu | Gln | Tyr | Asn | Ser | Thr | Tyr | Arg | Val | Val |  |  |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |  |  |
| Ser | Val | Leu | Thr | Val | Leu | His | Gln | Asp | Trp | Leu | Asn | Gly | Lys | Glu | Tyr |  |  |
|     |     |     | 405 |     |     |     |     |     | 410 |     |     |     |     | 415 |     |  |  |
| Lys | Cys | Lys | Val | Ser | Asn | Lys | Ala | Leu | Pro | Val | Pro | Ile | Glu | Lys | Thr |  |  |
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Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu  
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Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys  
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Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser  
465 470 475 480

Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp  
485 490 495

Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser  
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Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys  
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Cys Asp Lys Arg Asn Leu Thr Ala Leu Pro Pro Asp Leu Pro Lys Asp  
35 40 45

Thr Thr Ile Leu His Leu Ser Glu Asn Leu Leu Tyr Thr Phe Ser Leu  
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Ala Thr Leu Met Pro Tyr Thr Arg Leu Thr Gln Leu Asn Leu Asp Arg  
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Cys Glu Leu Thr Lys Leu Gln Val Asp Gly Thr Leu Pro Val Leu Gly  
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Thr Leu Asp Leu Ser His Asn Gln Leu Gln Ser Leu Pro Leu Leu Gly  
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Gln Thr Leu Pro Ala Leu Thr Val Leu Asp Val Ser Phe Asn Arg Leu  
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 Thr Ser Leu Pro Leu Gly Ala Leu Arg Gly Leu Gly Glu Leu Gln Glu  
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 Leu Tyr Leu Lys Gly Asn Glu Leu Lys Thr Leu Pro Pro Gly Leu Leu  
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 Thr Pro Thr Pro Lys Leu Glu Lys Leu Ser Leu Ala Asn Asn Asn Leu  
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 Thr Glu Leu Pro Ala Gly Leu Leu Asn Gly Leu Glu Asn Leu Asp Thr  
 180 185 190  
 Leu Leu Leu Gln Glu Asn Ser Leu Tyr Thr Ile Pro Lys Gly Phe Phe  
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 Gly Ser His Leu Leu Pro Phe Ala Phe Leu His Gly Asn Pro Trp Leu  
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 Glu Asn Val Tyr Val Trp Lys Gln Gly Val Asp Val Lys Ala Met Thr  
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 260 265 270  
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 Thr Asp Leu Tyr Asp Tyr Tyr Pro Glu Glu Asp Thr Glu Gly Asp Lys  
 290 295 300  
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 305 310 315 320  
 His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Leu Gly Ala Pro Ser  
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 Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg  
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 Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro  
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 Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val  
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Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Val Pro Ile Glu Lys Thr  
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 Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu  
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 Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys  
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 Ala Thr Leu Met Pro Tyr Thr Arg Leu Thr Gln Leu Asn Leu Asp Arg  
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Thr Leu Asp Leu Ser His Asn Gln Leu Gln Ser Leu Pro Leu Leu Gly  
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 195 200 205  
 Gly Ser His Leu Leu Pro Phe Ala Phe Leu His Gly Asn Pro Trp Leu  
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 Cys Asn Cys Glu Ile Leu Tyr Phe Arg Arg Trp Leu Gln Asp Asn Ala  
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 Glu Asn Val Tyr Val Trp Lys Gln Val Val Asp Val Lys Ala Val Thr  
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 Tyr Lys Tyr Pro Gly Lys Gly Cys Pro Thr Leu Gly Asp Glu Gly Asp  
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 Thr Asp Leu Tyr Asp Tyr Tyr Pro Glu Glu Asp Thr Glu Gly Asp Lys  
 290 295 300  
 Val Ala Ala Thr Ala Thr Val Val Lys Phe Pro Thr Lys Ala Arg Pro  
 305 310 315 320  
 His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Leu Gly Ala Pro Ser  
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 Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg  
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 Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro  
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 Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala  
 370 375 380  
 Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val  
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Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr  
 405 410 415  
 Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Val Pro Ile Glu Lys Thr  
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 Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu  
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 Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys  
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 485 490 495  
 Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser  
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 Cys Asp Lys Arg Asn Leu Thr Ala Leu Pro Pro Asp Leu Pro Lys Asp  
 35 40 45  
 Thr Thr Ile Leu His Leu Ser Glu Asn Leu Leu Tyr Thr Phe Ser Leu  
 50 55 60  
 Ala Thr Leu Met Pro Tyr Thr Arg Leu Thr Gln Leu Asn Leu Asp Arg  
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Cys Glu Leu Thr Lys Leu Gln Val Asp Gly Thr Leu Pro Val Leu Gly  
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Thr Leu Asp Leu Ser His Asn Gln Leu Gln Ser Leu Pro Leu Leu Gly  
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Gln Thr Leu Pro Ala Leu Thr Val Leu Asp Val Ser Phe Asn Arg Leu  
                                     115                                    120                                    125

Thr Ser Leu Pro Leu Gly Ala Leu Arg Gly Leu Gly Glu Leu Gln Glu  
                                     130                                    135                                    140

Leu Tyr Leu Lys Gly Asn Glu Leu Lys Thr Leu Pro Pro Gly Leu Leu  
                                     145                                    150                                    155                                    160

Thr Pro Thr Pro Lys Leu Glu Lys Leu Ser Leu Ala Asn Asn Asn Leu  
                                     165                                    170                                    175

Thr Glu Leu Pro Ala Gly Leu Leu Asn Gly Leu Glu Asn Leu Asp Thr  
                                     180                                    185                                    190

Leu Leu Leu Gln Glu Asn Ser Leu Tyr Thr Ile Pro Lys Gly Phe Phe  
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Gly Ser His Leu Leu Pro Phe Ala Phe Leu His Gly Asn Pro Trp Leu  
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Cys Asn Cys Glu Ile Leu Tyr Phe Arg Arg Trp Leu Gln Asp Asn Ala  
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Glu Asn Val Tyr Val Trp Lys Gln Gly Val Asp Val Lys Ala Met Thr  
                                     245                                    250                                    255

Ser Asn Val Ala Ser Val Gln Cys Asp Asn Ser Asp Lys Phe Pro Val  
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Tyr Lys Tyr Pro Gly Lys Gly Cys Pro Thr Leu Gly Asp Glu Gly Asp  
                                     275                                    280                                    285

Thr Asp Leu Tyr Asp Tyr Tyr Pro Glu Glu Asp Thr Glu Gly Asp Lys  
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Val Arg Pro His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Leu Gly  
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Ala Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met  
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Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His  
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Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val  
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His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr  
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Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly  
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 Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Val Pro Ile  
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 Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val  
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 Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser  
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 Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu  
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 Cys Asp Lys Arg Asn Leu Thr Ala Leu Pro Pro Asp Leu Pro Lys Asp  
 35 40 45  
 Thr Thr Ile Leu His Leu Ser Glu Asn Leu Leu Tyr Thr Phe Ser Leu  
 50 55 60  
 Ala Thr Leu Met Pro Tyr Thr Arg Leu Thr Gln Leu Asn Leu Asp Arg  
 65 70 75 80

Cys Glu Leu Thr Lys Leu Gln Val Asp Gly Thr Leu Pro Val Leu Gly  
 85 90 95  
 Thr Leu Asp Leu Ser His Asn Gln Leu Gln Ser Leu Pro Leu Leu Gly  
 100 105 110  
 Gln Thr Leu Pro Ala Leu Thr Val Leu Asp Val Ser Phe Asn Arg Leu  
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 Thr Ser Leu Pro Leu Gly Ala Leu Arg Gly Leu Gly Glu Leu Gln Glu  
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 165 170 175  
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 180 185 190  
 Leu Leu Leu Gln Glu Asn Ser Leu Tyr Thr Ile Pro Lys Gly Phe Phe  
 195 200 205  
 Gly Ser His Leu Leu Pro Phe Ala Phe Leu His Gly Asn Pro Trp Leu  
 210 215 220  
 Cys Asn Cys Glu Ile Leu Tyr Phe Arg Arg Trp Leu Gln Asp Asn Ala  
 225 230 235 240  
 Glu Asn Val Tyr Val Trp Lys Gln Val Val Asp Val Lys Ala Val Thr  
 245 250 255  
 Ser Asn Val Ala Ser Val Gln Cys Asp Asn Ser Asp Lys Phe Pro Val  
 260 265 270  
 Tyr Lys Tyr Pro Gly Lys Gly Cys Pro Thr Leu Gly Asp Glu Gly Asp  
 275 280 285  
 Thr Asp Leu Tyr Asp Tyr Tyr Pro Glu Glu Asp Thr Glu Gly Asp Lys  
 290 295 300  
 Val Arg Pro His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Leu Gly  
 305 310 315 320  
 Ala Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met  
 325 330 335  
 Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His  
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 Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val  
 355 360 365  
 His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr  
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Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly  
 385 390 395 400  
 Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Val Pro Ile  
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 Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val  
 420 425 430  
 Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser  
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 Cys Asp Lys Arg Asn Leu Thr Ala Leu Pro Pro Asp Leu Pro Lys Asp  
 35 40 45  
 Thr Thr Ile Leu His Leu Ser Glu Asn Leu Leu Tyr Thr Phe Ser Leu  
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 Ala Thr Leu Met Pro Tyr Thr Arg Leu Thr Gln Leu Asn Leu Asp Arg  
 65 70 75 80

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Glu | Leu | Thr | Lys | Leu | Gln | Val | Asp | Gly | Thr | Leu | Pro | Val | Leu | Gly | 85  | 90  | 95  |
| Thr | Leu | Asp | Leu | Ser | His | Asn | Gln | Leu | Gln | Ser | Leu | Pro | Leu | Leu | Gly | 100 | 105 | 110 |
| Gln | Thr | Leu | Pro | Ala | Leu | Thr | Val | Leu | Asp | Val | Ser | Phe | Asn | Arg | Leu | 115 | 120 | 125 |
| Thr | Ser | Leu | Pro | Leu | Gly | Ala | Leu | Arg | Gly | Leu | Gly | Glu | Leu | Gln | Glu | 130 | 135 | 140 |
| Leu | Tyr | Leu | Lys | Gly | Asn | Glu | Leu | Lys | Thr | Leu | Pro | Pro | Gly | Leu | Leu | 145 | 150 | 155 |
| Thr | Pro | Thr | Pro | Lys | Leu | Glu | Lys | Leu | Ser | Leu | Ala | Asn | Asn | Asn | Leu | 165 | 170 | 175 |
| Thr | Glu | Leu | Pro | Ala | Gly | Leu | Leu | Asn | Gly | Leu | Glu | Asn | Leu | Asp | Thr | 180 | 185 | 190 |
| Leu | Leu | Leu | Gln | Glu | Asn | Ser | Leu | Tyr | Thr | Ile | Pro | Lys | Gly | Phe | Phe | 195 | 200 | 205 |
| Gly | Ser | His | Leu | Leu | Pro | Phe | Ala | Phe | Leu | His | Gly | Asn | Pro | Trp | Leu | 210 | 215 | 220 |
| Cys | Asn | Cys | Glu | Ile | Leu | Tyr | Phe | Arg | Arg | Trp | Leu | Gln | Asp | Asn | Ala | 225 | 230 | 235 |
| Glu | Asn | Val | Tyr | Val | Trp | Lys | Gln | Gly | Val | Asp | Val | Ala | Ala | Met | Thr | 245 | 250 | 255 |
| Ser | Asn | Val | Ala | Ser | Val | Gln | Cys | Asp | Asn | Ser | Asp | Lys | Phe | Pro | Val | 260 | 265 | 270 |
| Tyr | Lys | Tyr | Pro | Gly | Lys | Gly | Cys | Pro | Thr | Leu | Gly | Asp | Glu | Gly | Asp | 275 | 280 | 285 |
| Thr | Asp | Leu | Tyr | Asp | Tyr | Tyr | Pro | Glu | Glu | Asp | Thr | Glu | Gly | Asp | Lys | 290 | 295 | 300 |
| Val | Arg | Pro | His | Thr | Cys | Pro | Pro | Cys | Pro | Ala | Pro | Glu | Ala | Leu | Gly | 305 | 310 | 315 |
| Ala | Pro | Ser | Val | Phe | Leu | Phe | Pro | Pro | Lys | Pro | Lys | Asp | Thr | Leu | Met | 325 | 330 | 335 |
| Ile | Ser | Arg | Thr | Pro | Glu | Val | Thr | Cys | Val | Val | Val | Asp | Val | Ser | His | 340 | 345 | 350 |
| Glu | Asp | Pro | Glu | Val | Lys | Phe | Asn | Trp | Tyr | Val | Asp | Gly | Val | Glu | Val | 355 | 360 | 365 |
| His | Asn | Ala | Lys | Thr | Lys | Pro | Arg | Glu | Glu | Gln | Tyr | Asn | Ser | Thr | Tyr | 370 | 375 | 380 |

Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly  
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 405 410 415  
 Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val  
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 Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser  
 435 440 445  
 Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu  
 450 455 460  
 Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro  
 465 470 475 480  
 Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val  
 485 490 495  
 Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met  
 500 505 510  
 His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser  
 515 520 525  
 Pro Gly Lys  
 530

<210> 7  
 <211> 302  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> DOMAIN  
 <222> (1)..(302)  
 <223> GP1b302

<400> 7  
 His Pro Ile Cys Glu Val Ser Lys Val Ala Ser His Leu Glu Val Asn  
 1 5 10 15  
 Cys Asp Lys Arg Asn Leu Thr Ala Leu Pro Pro Asp Leu Pro Lys Asp  
 20 25 30  
 Thr Thr Ile Leu His Leu Ser Glu Asn Leu Leu Tyr Thr Phe Ser Leu  
 35 40 45  
 Ala Thr Leu Met Pro Tyr Thr Arg Leu Thr Gln Leu Asn Leu Asp Arg  
 50 55 60  
 Cys Glu Leu Thr Lys Leu Gln Val Asp Gly Thr Leu Pro Val Leu Gly  
 65 70 75 80



Cys Asp Lys Arg Asn Leu Thr Ala Leu Pro Pro Asp Leu Pro Lys Asp  
 20 25 30  
 Thr Thr Ile Leu His Leu Ser Glu Asn Leu Leu Tyr Thr Phe Ser Leu  
 35 40 45  
 Ala Thr Leu Met Pro Tyr Thr Arg Leu Thr Gln Leu Asn Leu Asp Arg  
 50 55 60  
 Cys Glu Leu Thr Lys Leu Gln Val Asp Gly Thr Leu Pro Val Leu Gly  
 65 70 75 80  
 Thr Leu Asp Leu Ser His Asn Gln Leu Gln Ser Leu Pro Leu Leu Gly  
 85 90 95  
 Gln Thr Leu Pro Ala Leu Thr Val Leu Asp Val Ser Phe Asn Arg Leu  
 100 105 110  
 Thr Ser Leu Pro Leu Gly Ala Leu Arg Gly Leu Gly Glu Leu Gln Glu  
 115 120 125  
 Leu Tyr Leu Lys Gly Asn Glu Leu Lys Thr Leu Pro Pro Gly Leu Leu  
 130 135 140  
 Thr Pro Thr Pro Lys Leu Glu Lys Leu Ser Leu Ala Asn Asn Asn Leu  
 145 150 155 160  
 Thr Glu Leu Pro Ala Gly Leu Leu Asn Gly Leu Glu Asn Leu Asp Thr  
 165 170 175  
 Leu Leu Leu Gln Glu Asn Ser Leu Tyr Thr Ile Pro Lys Gly Phe Phe  
 180 185 190  
 Gly Ser His Leu Leu Pro Phe Ala Phe Leu His Gly Asn Pro Trp Leu  
 195 200 205  
 Cys Asn Cys Glu Ile Leu Tyr Phe Arg Arg Trp Leu Gln Asp Asn Ala  
 210 215 220  
 Glu Asn Val Tyr Val Trp Lys Gln Gly Val Asp Val Lys Ala Met Thr  
 225 230 235 240  
 Ser Asn Val Ala Ser Val Gln Cys Asp Asn Ser Asp Lys Phe Pro Val  
 245 250 255  
 Tyr Lys Tyr Pro Gly Lys Gly Cys Pro Thr Leu Gly Asp Glu Gly Asp  
 260 265 270  
 Thr Asp Leu Tyr Asp Tyr Tyr Pro Glu Glu Asp Thr Glu Gly Asp Lys  
 275 280 285  
 Val Ala Ala Thr Ala Thr Val Val Lys Phe Pro Thr Lys Ala  
 290 295 300

<210> 9

<211> 301  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> DOMAIN  
 <222> (1)..(301)  
 <223> GP1b/4X

<400> 9

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Pro | Ile | Cys | Glu | Val | Ser | Lys | Val | Ala | Ser | His | Leu | Glu | Val | Asn | 1   | 5   | 10  | 15  |
| Cys | Asp | Lys | Arg | Asn | Leu | Thr | Ala | Leu | Pro | Pro | Asp | Leu | Pro | Lys | Asp | 20  | 25  | 30  |     |
| Thr | Thr | Ile | Leu | His | Leu | Ser | Glu | Asn | Leu | Leu | Tyr | Thr | Phe | Ser | Leu | 35  | 40  | 45  |     |
| Ala | Thr | Leu | Met | Pro | Tyr | Thr | Arg | Leu | Thr | Gln | Leu | Asn | Leu | Asp | Arg | 50  | 55  | 60  |     |
| Cys | Glu | Leu | Thr | Lys | Leu | Gln | Val | Asp | Gly | Thr | Leu | Pro | Val | Leu | Gly | 65  | 70  | 75  | 80  |
| Thr | Leu | Asp | Leu | Ser | His | Asn | Gln | Leu | Gln | Ser | Leu | Pro | Leu | Leu | Gly | 85  | 90  | 95  |     |
| Gln | Thr | Leu | Pro | Ala | Leu | Thr | Val | Leu | Asp | Val | Ser | Phe | Asn | Arg | Leu | 100 | 105 | 110 |     |
| Thr | Ser | Leu | Pro | Leu | Gly | Ala | Leu | Arg | Gly | Leu | Gly | Glu | Leu | Gln | Glu | 115 | 120 | 125 |     |
| Leu | Tyr | Leu | Lys | Gly | Asn | Glu | Leu | Lys | Thr | Leu | Pro | Pro | Gly | Leu | Leu | 130 | 135 | 140 |     |
| Thr | Pro | Thr | Pro | Lys | Leu | Glu | Lys | Leu | Ser | Leu | Ala | Asn | Asn | Asn | Leu | 145 | 150 | 155 | 160 |
| Thr | Glu | Leu | Pro | Ala | Gly | Leu | Leu | Asn | Gly | Leu | Glu | Asn | Leu | Asp | Thr | 165 | 170 | 175 |     |
| Leu | Leu | Leu | Gln | Glu | Asn | Ser | Leu | Tyr | Thr | Ile | Pro | Lys | Gly | Phe | Phe | 180 | 185 | 190 |     |
| Gly | Ser | His | Leu | Leu | Pro | Phe | Ala | Phe | Leu | His | Gly | Asn | Pro | Trp | Leu | 195 | 200 | 205 |     |
| Cys | Asn | Cys | Glu | Ile | Leu | Tyr | Phe | Arg | Arg | Trp | Leu | Gln | Asp | Asn | Ala | 210 | 215 | 220 |     |
| Glu | Asn | Val | Tyr | Val | Trp | Lys | Gln | Val | Val | Asp | Val | Lys | Ala | Val | Thr | 225 | 230 | 235 | 240 |
| Ser | Asn | Val | Ala | Ser | Val | Gln | Cys | Asp | Asn | Ser | Asp | Lys | Phe | Pro | Val | 245 | 250 | 255 |     |



Lys Tyr Pro Gly Lys Gly Cys Pro Thr Leu Gly Asp Glu Gly Asp Thr  
260 265 270

Asp Leu Tyr Asp Tyr Tyr Pro Glu Glu Asp Thr Glu Gly Asp Lys Val  
275 280 285

Ala Ala Thr Ala Thr Val Val Lys Phe Pro Thr Lys Ala  
290 295 300

<210> 10  
<211> 290  
<212> PRT  
<213> Homo sapiens

<220>  
<221> DOMAIN  
<222> (1)..(290)  
<223> GP1b290

<400> 10  
His Pro Ile Cys Glu Val Ser Lys Val Ala Ser His Leu Glu Val Asn  
1 5 10 15

Cys Asp Lys Arg Asn Leu Thr Ala Leu Pro Pro Asp Leu Pro Lys Asp  
20 25 30

Thr Thr Ile Leu His Leu Ser Glu Asn Leu Leu Tyr Thr Phe Ser Leu  
35 40 45

Ala Thr Leu Met Pro Tyr Thr Arg Leu Thr Gln Leu Asn Leu Asp Arg  
50 55 60

Cys Glu Leu Thr Lys Leu Gln Val Asp Gly Thr Leu Pro Val Leu Gly  
65 70 75 80

Thr Leu Asp Leu Ser His Asn Gln Leu Gln Ser Leu Pro Leu Leu Gly  
85 90 95

Gln Thr Leu Pro Ala Leu Thr Val Leu Asp Val Ser Phe Asn Arg Leu  
100 105 110

Thr Ser Leu Pro Leu Gly Ala Leu Arg Gly Leu Gly Glu Leu Gln Glu  
115 120 125

Leu Tyr Leu Lys Gly Asn Glu Leu Lys Thr Leu Pro Pro Gly Leu Leu  
130 135 140

Thr Pro Thr Pro Lys Leu Glu Lys Leu Ser Leu Ala Asn Asn Asn Leu  
145 150 155 160

Thr Glu Leu Pro Ala Gly Leu Leu Asn Gly Leu Glu Asn Leu Asp Thr  
165 170 175

Leu Leu Leu Gln Glu Asn Ser Leu Tyr Thr Ile Pro Lys Gly Phe Phe  
180 185 190

Gly Ser His Leu Leu Pro Phe Ala Phe Leu His Gly Asn Pro Trp Leu  
 195 200 205  
 Cys Asn Cys Glu Ile Leu Tyr Phe Arg Arg Trp Leu Gln Asp Asn Ala  
 210 215 220  
 Glu Asn Val Tyr Val Trp Lys Gln Gly Val Asp Val Lys Ala Met Thr  
 225 230 235 240  
 Ser Asn Val Ala Ser Val Gln Cys Asp Asn Ser Asp Lys Phe Pro Val  
 245 250 255  
 Tyr Lys Tyr Pro Gly Lys Gly Cys Pro Thr Leu Gly Asp Glu Gly Asp  
 260 265 270  
 Thr Asp Leu Tyr Asp Tyr Tyr Pro Glu Glu Asp Thr Glu Gly Asp Lys  
 275 280 285  
 Val Arg  
 290

<210> 11  
 <211> 290  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> DOMAIN  
 <222> (1)..(290)  
 <223> GB1b290/2V

<400> 11  
 His Pro Ile Cys Glu Val Ser Lys Val Ala Ser His Leu Glu Val Asn  
 1 5 10 15  
 Cys Asp Lys Arg Asn Leu Thr Ala Leu Pro Pro Asp Leu Pro Lys Asp  
 20 25 30  
 Thr Thr Ile Leu His Leu Ser Glu Asn Leu Leu Tyr Thr Phe Ser Leu  
 35 40 45  
 Ala Thr Leu Met Pro Tyr Thr Arg Leu Thr Gln Leu Asn Leu Asp Arg  
 50 55 60  
 Cys Glu Leu Thr Lys Leu Gln Val Asp Gly Thr Leu Pro Val Leu Gly  
 65 70 75 80  
 Thr Leu Asp Leu Ser His Asn Gln Leu Gln Ser Leu Pro Leu Leu Gly  
 85 90 95  
 Gln Thr Leu Pro Ala Leu Thr Val Leu Asp Val Ser Phe Asn Arg Leu  
 100 105 110  
 Thr Ser Leu Pro Leu Gly Ala Leu Arg Gly Leu Gly Glu Leu Gln Glu  
 115 120 125

Leu Tyr Leu Lys Gly Asn Glu Leu Lys Thr Leu Pro Pro Gly Leu Leu  
130 135 140

Thr Pro Thr Pro Lys Leu Glu Lys Leu Ser Leu Ala Asn Asn Asn Leu  
145 150 155 160

Thr Glu Leu Pro Ala Gly Leu Leu Asn Gly Leu Glu Asn Leu Asp Thr  
165 170 175

Leu Leu Leu Gln Glu Asn Ser Leu Tyr Thr Ile Pro Lys Gly Phe Phe  
180 185 190

Gly Ser His Leu Leu Pro Phe Ala Phe Leu His Gly Asn Pro Trp Leu  
195 200 205

Cys Asn Cys Glu Ile Leu Tyr Phe Arg Arg Trp Leu Gln Asp Asn Ala  
210 215 220

Glu Asn Val Tyr Val Trp Lys Gln Val Val Asp Val Lys Ala Val Thr  
225 230 235 240

Ser Asn Val Ala Ser Val Gln Cys Asp Asn Ser Asp Lys Phe Pro Val  
245 250 255

Tyr Lys Tyr Pro Gly Lys Gly Cys Pro Thr Leu Gly Asp Glu Gly Asp  
260 265 270

Thr Asp Leu Tyr Asp Tyr Tyr Pro Glu Glu Asp Thr Glu Gly Asp Lys  
275 280 285

Val Arg  
290

<210> 12  
<211> 290  
<212> PRT  
<213> Homo sapiens

<220>  
<221> DOMAIN  
<222> (1)..(290)  
<223> GB1b290/1A

<400> 12  
His Pro Ile Cys Glu Val Ser Lys Val Ala Ser His Leu Glu Val Asn  
1 5 10 15

Cys Asp Lys Arg Asn Leu Thr Ala Leu Pro Pro Asp Leu Pro Lys Asp  
20 25 30

Thr Thr Ile Leu His Leu Ser Glu Asn Leu Leu Tyr Thr Phe Ser Leu  
35 40 45

Ala Thr Leu Met Pro Tyr Thr Arg Leu Thr Gln Leu Asn Leu Asp Arg  
50 55 60

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Glu | Leu | Thr | Lys | Leu | Gln | Val | Asp | Gly | Thr | Leu | Pro | Val | Leu | Gly | 65  | 70  | 75  | 80  |
| Thr | Leu | Asp | Leu | Ser | His | Asn | Gln | Leu | Gln | Ser | Leu | Pro | Leu | Leu | Gly | 85  | 90  | 95  |     |
| Gln | Thr | Leu | Pro | Ala | Leu | Thr | Val | Leu | Asp | Val | Ser | Phe | Asn | Arg | Leu | 100 | 105 | 110 |     |
| Thr | Ser | Leu | Pro | Leu | Gly | Ala | Leu | Arg | Gly | Leu | Gly | Glu | Leu | Gln | Glu | 115 | 120 | 125 |     |
| Leu | Tyr | Leu | Lys | Gly | Asn | Glu | Leu | Lys | Thr | Leu | Pro | Pro | Gly | Leu | Leu | 130 | 135 | 140 |     |
| Thr | Pro | Thr | Pro | Lys | Leu | Glu | Lys | Leu | Ser | Leu | Ala | Asn | Asn | Asn | Leu | 145 | 150 | 155 | 160 |
| Thr | Glu | Leu | Pro | Ala | Gly | Leu | Leu | Asn | Gly | Leu | Glu | Asn | Leu | Asp | Thr | 165 | 170 | 175 |     |
| Leu | Leu | Leu | Gln | Glu | Asn | Ser | Leu | Tyr | Thr | Ile | Pro | Lys | Gly | Phe | Phe | 180 | 185 | 190 |     |
| Gly | Ser | His | Leu | Leu | Pro | Phe | Ala | Phe | Leu | His | Gly | Asn | Pro | Trp | Leu | 195 | 200 | 205 |     |
| Cys | Asn | Cys | Glu | Ile | Leu | Tyr | Phe | Arg | Arg | Trp | Leu | Gln | Asp | Asn | Ala | 210 | 215 | 220 |     |
| Glu | Asn | Val | Tyr | Val | Trp | Lys | Gln | Gly | Val | Asp | Val | Ala | Ala | Met | Thr | 225 | 230 | 235 | 240 |
| Ser | Asn | Val | Ala | Ser | Val | Gln | Cys | Asp | Asn | Ser | Asp | Lys | Phe | Pro | Val | 245 | 250 | 255 |     |
| Tyr | Lys | Tyr | Pro | Gly | Lys | Gly | Cys | Pro | Thr | Leu | Gly | Asp | Glu | Gly | Asp | 260 | 265 | 270 |     |
| Thr | Asp | Leu | Tyr | Asp | Tyr | Tyr | Pro | Glu | Glu | Asp | Thr | Glu | Gly | Asp | Lys | 275 | 280 | 285 |     |
| Val | Arg |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 290 |     |     |     |

<210> 13  
 <211> 16  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> DOMAIN  
 <222> (1)..(16)  
 <223> Signal Peptide

<400> 13

Met Pro Leu Leu Leu Leu Leu Leu Leu Leu Pro Ser Pro Leu His Pro  
1 5 10 15

<210> 14

<211> 224

<212> PRT

<213> Homo sapiens

<220>

<221> DOMAIN

<222> (1)..(224)

<400> 14

His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Leu Gly Ala Pro Ser  
1 5 10 15

Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg  
20 25 30

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro  
35 40 45

Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala  
50 55 60

Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val  
65 70 75 80

Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr  
85 90 95

Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Val Pro Ile Glu Lys Thr  
100 105 110

Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu  
115 120 125

Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys  
130 135 140

Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser  
145 150 155 160

Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp  
165 170 175

Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser  
180 185 190

Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala  
195 200 205

Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys  
210 215 220

<210> 15  
 <211> 1632  
 <212> DNA  
 <213> Homo sapiens

<400> 15  
 atgcctctcc tctctttgct gctcctgctg ccaagccctt tacaccccca ccccatctgt 60  
 gaggtctcca aagtggccag ccacctagaa gtgaactgtg acaagaggaa tctgacagcg 120  
 ctgcctccag acctgccgaa agacacaacc atcctccacc tgagtggagaa cctcctgtac 180  
 accttctccc tggcaaccct gatgccttac actgcctca ctcagctgaa cctagatagg 240  
 tgcgagctca ccaagctcca ggtcgatggg acgctgccag tgctggggac cctggatcta 300  
 tcccacaatc agctgcaaag cctgcccttg ctagggcaga cactgcctgc tctcaccgtc 360  
 ctggacgtct ctttcaaccg gctgacctcg ctgcctcttg gtgccctgcg tgggtcttggc 420  
 gaactccaag agctctacct gaaaggcaat gagctgaaga ccctgcccc agggctcctg 480  
 acgcccacac ccaagctgga gaagctcagt ctggctaaca acaacttgac tgagctcccc 540  
 gctgggctcc tgaatgggct ggagaatctc gacacccttc tctccaaga gaactcgctg 600  
 tatacaatac caaagggctt ttttgggtcc cactcctgc cttttgcttt tctccacggg 660  
 aacctctggg tatgcaactg tgagatcttc tattttcgtc gctggctgca ggacaatgct 720  
 gaaaatgtct acgtatggaa gcaagggtgtg gacgtcaagg ccatgacctc taacgtggcc 780  
 aytgtgcagt gtgacaattc agacaagttt cccgtctaca aatacccagg aaaggggtgc 840  
 cccacccttg gtgatgaagg tgacacagac ctatatgatt actaccaga agaggacact 900  
 gagggcgata aggtgcgtgc cacaaggact gtggtcaagt tccccaccaa agcgcgggcg 960  
 cacacatgcc caccgtgccc agcacctgaa gccctggggg caccgtcagt ctctctcttc 1020  
 cccccaaaac ccaaggacac cctcatgata tcccggacct ctgaggtcac atgcgtgggtg 1080  
 gtggacgtga gccacgaaga cctgaggtc aagttcaact ggtacgtgga cggcgtggag 1140  
 gtgcataatg ccaagacaaa gccgcgggag gagcagtaca acagcacgta ccgtgtgggtc 1200  
 agcgtctctc ccgtcctgca ccaggactgg ctgaatggca aggagtacaa gtgcaagggtc 1260  
 tccaacaaag ccctcccagt ccccatcgag aaaaccatct ccaaagccaa agggcgagccc 1320  
 cgagaaccac aggtgtacac cctgccccca tcccgggagg agatgaccac gaaccagggtc 1380  
 agcctgacct gcctgggtcaa aggtttctat cccagcgaca tcgccgtgga gtgggagagc 1440  
 aatgggcagc cggagaacaa ctacaagacc acgctcccc tgctggactc cgacggcccc 1500  
 ttcttctctc acagcaagct caccgtggac aagagcaggt ggcagcaggg gaacgtcttc 1560  
 tcatgctccg tgatgcatga ggctctgcac aaccactaca cgcagaagag cctctccctg 1620  
 tctccgggta aa 1632

<210> 16  
 <211> 1632  
 <212> DNA  
 <213> Homo sapiens

<400> 16  
 atgcctctcc tctctttgct gctcctgctg ccaagccctt tacaccccca ccccatctgt 60  
 gaggtctcca aagtggccag ccacctagaa gtgaactgtg acaagaggaa tctgacagcg 120  
 ctgcctccag acctgccgaa agacacaacc atcctccacc tgagtggagaa cctcctgtac 180  
 accttctccc tggcaaccct gatgccttac actgcctca ctcagctgaa cctagatagg 240  
 tgcgagctca ccaagctcca ggtcgatggg acgctgccag tgctggggac cctggatcta 300  
 tcccacaatc agctgcaaag cctgcccttg ctagggcaga cactgcctgc tctcaccgtc 360  
 ctggacgtct ctttcaaccg gctgacctcg ctgcctcttg gtgccctgcg tgggtcttggc 420  
 gaactccaag agctctacct gaaaggcaat gagctgaaga ccctgcccc agggctcctg 480  
 acgcccacac ccaagctgga gaagctcagt ctggctaaca acaacttgac tgagctcccc 540  
 gctgggctcc tgaatgggct ggagaatctc gacacccttc tctccaaga gaactcgctg 600  
 tatacaatac caaagggctt ttttgggtcc cactcctgc cttttgcttt tctccacggg 660

|             |            |            |             |             |             |      |
|-------------|------------|------------|-------------|-------------|-------------|------|
| aacccctggt  | tatgcaactg | tgagatcctc | tattttcgtc  | gctggctgca  | ggacaatgct  | 720  |
| gaaaatgtct  | acgtatggaa | gcaaggtgtg | gacgtcaagg  | ccatgacctc  | taacgtggcc  | 780  |
| agtgtgcagt  | gtgacaattc | agacaagttt | cccgctctaca | aatacccagg  | aaaggggtgc  | 840  |
| cccacccttg  | gtgatgaagg | tgacacagac | ctatatgatt  | actaccacaga | agaggacact  | 900  |
| gagggcgata  | aggtggctgc | cacagcgact | gtggtcaagt  | tccccaccaa  | agcgcgcccg  | 960  |
| cacacatgcc  | caccgtgccc | agcacctgaa | gccctggggg  | caccgtcagt  | cttcctcttc  | 1020 |
| cccccaaaac  | ccaaggacac | cctcatgata | tcccggaccc  | ctgaggtcac  | atgcgtgggtg | 1080 |
| gtggacgtga  | gccacgaaga | ccctgaggtc | aagttcaact  | ggtacgtgga  | cggcgtggag  | 1140 |
| gtgcataatg  | ccaagacaaa | gccgcgggag | gagcagtaca  | acagcacgta  | ccgtgtgggtc | 1200 |
| agcgtctctc  | ccgtctcgca | ccaggactgg | ctgaatggca  | aggagtacaa  | gtgcaaggtc  | 1260 |
| tccaacaaag  | ccctcccagt | ccccatcgag | aaaaccatct  | ccaaagccaa  | agggcagccc  | 1320 |
| cgagaaccac  | aggtgtacac | cctgccccca | tcccgggagg  | agatgaccaa  | gaaccaggtc  | 1380 |
| agcctgacct  | ggctgttcaa | aggcttctat | cccagcgaca  | tcgccgtgga  | gtgggagagc  | 1440 |
| aatgggcagc  | cggagaacaa | ctacaagacc | acgcctcccc  | tgctggactc  | cgacggcccc  | 1500 |
| ttcttctctc  | acagcaagct | caccgtggac | aagagcaggt  | ggcagcaggg  | gaacgtcttc  | 1560 |
| tcattgctccg | tgatgcatga | ggctctgcac | aaccactaca  | cgcagaagag  | cctctccctg  | 1620 |
| tctccgggta  | aa         |            |             |             |             | 1632 |

<210> 17

<211> 1632

<212> DNA

<213> Homo sapiens

<400> 17

|             |            |            |             |             |             |      |
|-------------|------------|------------|-------------|-------------|-------------|------|
| atgcctctcc  | tctcttctgt | gctcctgctg | ccaagcccct  | tacaccccca  | ccccatctgt  | 60   |
| gaggtctcca  | aagtggccag | ccacctagaa | gtgaactgtg  | acaagaggaa  | tctgacagcg  | 120  |
| ctgcctccag  | acctgccgaa | agacacaacc | atcctccacc  | tgagtggaga  | cctcctgtac  | 180  |
| accttctccc  | tggcaaccct | gatgccttac | actcgctca   | ctcagctgaa  | cctagatagg  | 240  |
| tgcgagctca  | ccaagctcca | ggtcgatggg | acgctgccag  | tgctggggac  | cctggatcta  | 300  |
| tcccacaatc  | agctgcaaag | cctgcccttg | ctagggcaga  | cactgcctgc  | tctcaccgtc  | 360  |
| ctggacgtct  | ccttcaaccg | gctgacctcg | ctgcctcttg  | gtgccctgcy  | tggctcttggc | 420  |
| gaactccaag  | agctctacct | gaaaggcaat | gagctgaaga  | ccctgcccc   | agggctcctg  | 480  |
| acgcccacac  | ccaagctgga | gaagctcagt | ctggctaaca  | acaacttgac  | tgagctcccc  | 540  |
| gctgggctcc  | tgaatgggct | ggagaatctc | gacacccctc  | tctccaaga   | gaactcgctg  | 600  |
| tatacaatac  | caaagggctt | ttttgggtcc | cacctcctgc  | cttttgcttt  | tctccaaggg  | 660  |
| aacccctggt  | tatgcaactg | tgagatcctc | tattttcgtc  | gctggctgca  | ggacaatgct  | 720  |
| gaaaatgtct  | acgtatggaa | gcaagtggtg | gacgtcaagg  | ccgtgacctc  | taacgtggcc  | 780  |
| agtgtgcagt  | gtgacaattc | agacaagttt | cccgctctaca | aatacccagg  | aaaggggtgc  | 840  |
| cccacccttg  | gtgatgaagg | tgacacagac | ctatatgatt  | actaccacaga | agaggacact  | 900  |
| gagggcgata  | aggtggctgc | cacagcgact | gtggtcaagt  | tccccaccaa  | agcgcgcccg  | 960  |
| cacacatgcc  | caccgtgccc | agcacctgaa | gccctggggg  | caccgtcagt  | cttcctcttc  | 1020 |
| cccccaaaac  | ccaaggacac | cctcatgata | tcccggaccc  | ctgaggtcac  | atgcgtgggtg | 1080 |
| gtggacgtga  | gccacgaaga | ccctgaggtc | aagttcaact  | ggtacgtgga  | cggcgtggag  | 1140 |
| gtgcataatg  | ccaagacaaa | gccgcgggag | gagcagtaca  | acagcacgta  | ccgtgtgggtc | 1200 |
| agcgtctctc  | ccgtctcgca | ccaggactgg | ctgaatggca  | aggagtacaa  | gtgcaaggtc  | 1260 |
| tccaacaaag  | ccctcccagt | ccccatcgag | aaaaccatct  | ccaaagccaa  | agggcagccc  | 1320 |
| cgagaaccac  | aggtgtacac | cctgccccca | tcccgggagg  | agatgaccaa  | gaaccaggtc  | 1380 |
| agcctgacct  | ggctgttcaa | aggcttctat | cccagcgaca  | tcgccgtgga  | gtgggagagc  | 1440 |
| aatgggcagc  | cggagaacaa | ctacaagacc | acgcctcccc  | tgctggactc  | cgacggcccc  | 1500 |
| ttcttctctc  | acagcaagct | caccgtggac | aagagcaggt  | ggcagcaggg  | gaacgtcttc  | 1560 |
| tcattgctccg | tgatgcatga | ggctctgcac | aaccactaca  | cgcagaagag  | cctctccctg  | 1620 |
| tctccgggta  | aa         |            |             |             |             | 1632 |

<210> 18

<211> 1593

<212> DNA

<213> Homo sapiens

<400> 18

|            |            |            |             |            |            |      |
|------------|------------|------------|-------------|------------|------------|------|
| atgcctctcc | tcctcttget | gtcctgctg  | ccaagccct   | tacaccccca | ccccatctgt | 60   |
| gaggtctcca | aagtggccag | ccacctagaa | gtgaactgtg  | acaagaggaa | tctgacagcg | 120  |
| ctgcctccag | acctgccgaa | agacacaacc | atcctccacc  | tgagtgagaa | cctcctgtac | 180  |
| accttctccc | tggcaaccct | gatgccttac | actgcctca   | ctcagctgaa | cctagatagg | 240  |
| tgcgagctca | ccaagctcca | ggtcgatggg | acgctgccag  | tgctggggac | cctggatcta | 300  |
| tcccacaatc | agctgcaaag | cctgcccttg | ctagggcaga  | cactgcctgc | tctcaccgtc | 360  |
| ctggacgtct | ccttcaaccg | gctgacctcg | ctgcctcttg  | gtgccctgcy | tggctctggc | 420  |
| gaactccaag | agctctacct | gaaaggcaat | gagctgaaga  | ccctgcccc  | agggctcctg | 480  |
| acgcccacac | ccaagctgga | gaagctcagt | ctggctaaca  | acaacttgac | tgagctcccc | 540  |
| gctgggctcc | tgaatgggct | ggagaatctc | gacaccttc   | tcctccaaga | gaactcgctg | 600  |
| tatacaatac | caaagggctt | ttttgggtcc | cacctcctgc  | cttttgcttt | tctccacggg | 660  |
| aacccctggg | tatgcaactg | tgagatcctc | tattttcgtc  | gctggctgca | ggacaatgct | 720  |
| gaaaatgtct | acgtatggaa | gcaaggtgtg | gacgtcaagg  | ccatgacctc | taacgtggcc | 780  |
| agtgtgcagt | gtgacaattc | agacaagttt | cccgctctaca | aatacccagg | aaaggggtgc | 840  |
| cccacccttg | gtgatgaagg | tgacacagac | ctatatgatt  | actaccacga | agaggacact | 900  |
| gagggcgata | aggtgcggcc | gcacacatgc | ccaccgtgcc  | cagcacctga | agccctgggg | 960  |
| gcaccgtcag | tcttctctct | ccccccaaaa | cccaaggaca  | ccctcatgat | ctcccggaac | 1020 |
| cctgaggtca | catgctgggt | ggtggacgtg | agccacgaag  | accctgaggt | caagttcaac | 1080 |
| tggtagctgg | acggcgtgga | ggtgcataat | gccaaagaaa  | agccgcggga | ggagcagtag | 1140 |
| aacagcacgt | accgtgtggt | cagcgtcctc | accgtcctgc  | accaggactg | gctgaatggc | 1200 |
| aaggagtaca | agtgcagggt | ctccaacaaa | gccctcccag  | tccccatcga | gaaaaccatc | 1260 |
| tccaaagcca | aagggcagcc | ccgagaacca | caggtgtaca  | ccctgcccc  | atcccgggag | 1320 |
| gagatgacca | agaaccaggt | cagcctgacc | tgcttggtca  | aaggcttcta | tcccagcgac | 1380 |
| atgcctgtgg | agtgggagag | caatgggcag | ccggagaaca  | actacaagac | cacgcctccc | 1440 |
| gtgctggact | ccgacggccc | cttcttctct | tacagcaagc  | tcaccgtgga | caagagcagg | 1500 |
| tggcagcagg | ggaacgtctt | ctcatgtctc | gtgatgcatg  | aggctctgca | caaccactac | 1560 |
| acgcagaaga | gcctctccct | gtctccgggt | aaa         |            |            | 1593 |

<210> 19

<211> 1593

<212> DNA

<213> Homo sapiens

<400> 19

|            |            |            |             |            |            |      |
|------------|------------|------------|-------------|------------|------------|------|
| atgcctctcc | tcctcttget | gtcctgctg  | ccaagccct   | tacaccccca | ccccatctgt | 60   |
| gaggtctcca | aagtggccag | ccacctagaa | gtgaactgtg  | acaagaggaa | tctgacagcg | 120  |
| ctgcctccag | acctgccgaa | agacacaacc | atcctccacc  | tgagtgagaa | cctcctgtac | 180  |
| accttctccc | tggcaaccct | gatgccttac | actgcctca   | ctcagctgaa | cctagatagg | 240  |
| tgcgagctca | ccaagctcca | ggtcgatggg | acgctgccag  | tgctggggac | cctggatcta | 300  |
| tcccacaatc | agctgcaaag | cctgcccttg | ctagggcaga  | cactgcctgc | tctcaccgtc | 360  |
| ctggacgtct | ccttcaaccg | gctgacctcg | ctgcctcttg  | gtgccctgcy | tggctctggc | 420  |
| gaactccaag | agctctacct | gaaaggcaat | gagctgaaga  | ccctgcccc  | agggctcctg | 480  |
| acgcccacac | ccaagctgga | gaagctcagt | ctggctaaca  | acaacttgac | tgagctcccc | 540  |
| gctgggctcc | tgaatgggct | ggagaatctc | gacaccttc   | tcctccaaga | gaactcgctg | 600  |
| tatacaatac | caaagggctt | ttttgggtcc | cacctcctgc  | cttttgcttt | tctccacggg | 660  |
| aacccctggg | tatgcaactg | tgagatcctc | tattttcgtc  | gctggctgca | ggacaatgct | 720  |
| gaaaatgtct | acgtatggaa | gcaagtggtg | gacgtcaagg  | ccgtgacctc | taacgtggcc | 780  |
| agtgtgcagt | gtgacaattc | agacaagttt | cccgctctaca | aatacccagg | aaaggggtgc | 840  |
| cccacccttg | gtgatgaagg | tgacacagac | ctatatgatt  | actaccacga | agaggacact | 900  |
| gagggcgata | aggtgcggcc | gcacacatgc | ccaccgtgcc  | cagcacctga | agccctgggg | 960  |
| gcaccgtcag | tcttctctct | ccccccaaaa | cccaaggaca  | ccctcatgat | ctcccggaac | 1020 |
| cctgaggtca | catgctgggt | ggtggacgtg | agccacgaag  | accctgaggt | caagttcaac | 1080 |



|            |            |            |             |            |            |      |
|------------|------------|------------|-------------|------------|------------|------|
| tggtacgtgg | acggcgtgga | ggtgcataat | gccaaagacaa | agccgcggga | ggagcagtag | 1140 |
| aacagcacgt | accgtgtggt | cagcgtcctc | accgtcctgc  | accaggactg | gctgaatggc | 1200 |
| aaggagtaca | agtgaagggt | ctccaacaaa | gccctcccag  | tccccatcga | gaaaaccatc | 1260 |
| tccaaagcca | aagggcagcc | ccgagaacca | caggtgtaca  | ccctgcccc  | atcccgggag | 1320 |
| gagatgacca | agaaccaggt | cagcctgacc | tgccctggtca | aaggcttcta | tcccagcgac | 1380 |
| atcgccgtgg | agtgggagag | caatgggcag | ccggagaaca  | actacaagac | cacgcctccc | 1440 |
| gtgctggact | ccgacggccc | cttcttcttc | tacagcaagc  | tcaccgtgga | caagagcagg | 1500 |
| tggcagcagg | ggaacgtctt | ctcatgctcc | gtgatgcatg  | aggctctgca | caaccactac | 1560 |
| acgcagaaga | gcctctccct | gtctccgggt | aaa         |            |            | 1593 |

<210> 20

<211> 1593

<212> DNA

<213> Homo sapiens

<400> 20

|            |            |             |             |             |            |      |
|------------|------------|-------------|-------------|-------------|------------|------|
| atgcctctcc | tctcttggct | gctcctgctg  | ccaagcccct  | tacaccccca  | ccccatctgt | 60   |
| gaggtctcca | aagtggccag | ccacctagaa  | gtgaactgtg  | acaagaggaa  | tctgacagcg | 120  |
| ctgcctccag | acctgccgaa | agacacaacc  | atcctccacc  | tgagtggagaa | cctcctgtac | 180  |
| accttctccc | tggaaccctt | gatgccttac  | actgcctcca  | ctcagctgaa  | cctagatagg | 240  |
| tgcgagctca | ccaagctcca | ggtcgatggg  | acgctgccag  | tgctggggac  | cctggatcta | 300  |
| tcccacaatc | agctgcaaag | cctgcccttg  | ctagggcaga  | cactgcctgc  | tctcaccgtc | 360  |
| ctggacgtct | ccttcaaccg | gctgacctcg  | ctgcctcttg  | gtgccttgcg  | tggtcttggc | 420  |
| gaactccaag | agctctacct | gaaaggcaat  | gagctgaaga  | ccctgcccc   | agggtcctg  | 480  |
| acgcccacac | ccaagctgga | gaagctcagt  | ctggctaaca  | acaacttgac  | tgagctcccc | 540  |
| gctgggctcc | tgaatgggct | ggagaatctc  | gacacccttc  | tctccaaga   | gaactcgctg | 600  |
| tatacaatac | caaagggctt | ttttgggtcc  | cacctcctgc  | cttttgcctt  | tctccacggg | 660  |
| aacccttgg  | tatgcaactg | tgagatcttc  | tattttcgtc  | gctggctgca  | ggacaatgct | 720  |
| gaaaatgtct | acgtatggaa | gcaagggtgtg | gacgtcgcg   | ccatgacctc  | taacgtggcc | 780  |
| agtgtgcagt | gtgacaattc | agacaagttt  | cccgtctaca  | aatacccagg  | aaaggggtgc | 840  |
| cccacccttg | gtgatgaagg | tgacacagac  | ctatatgatt  | actaccaga   | agaggacact | 900  |
| gagggcgata | aggtgcggcc | gcacacatgc  | ccaccgtgcc  | cagcacctga  | agccctgggg | 960  |
| gcaccgtcag | tcttctctct | ccccccaaaa  | cccaaggaca  | ccctcatgat  | ctcccggacc | 1020 |
| cctgaggtca | catgcgtggt | ggtggacgtg  | agccacgaag  | accctgaggt  | caagttcaac | 1080 |
| tggtacgtgg | acggcgtgga | ggtgcataat  | gccaaagacaa | agccgcggga  | ggagcagtag | 1140 |
| aacagcacgt | accgtgtggt | cagcgtcctc  | accgtcctgc  | accaggactg  | gctgaatggc | 1200 |
| aaggagtaca | agtgaagggt | ctccaacaaa  | gccctcccag  | tccccatcga  | gaaaaccatc | 1260 |
| tccaaagcca | aagggcagcc | ccgagaacca  | caggtgtaca  | ccctgcccc   | atcccgggag | 1320 |
| gagatgacca | agaaccaggt | cagcctgacc  | tgccctggtca | aaggcttcta  | tcccagcgac | 1380 |
| atcgccgtgg | agtgggagag | caatgggcag  | ccggagaaca  | actacaagac  | cacgcctccc | 1440 |
| gtgctggact | ccgacggccc | cttcttcttc  | tacagcaagc  | tcaccgtgga  | caagagcagg | 1500 |
| tggcagcagg | ggaacgtctt | ctcatgctcc  | gtgatgcatg  | aggctctgca  | caaccactac | 1560 |
| acgcagaaga | gcctctccct | gtctccgggt  | aaa         |             |            | 1593 |

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